Food, Land, and People Correlations
NCSCOS Science 2005
Grades 3-5

GRADE 3

Goal 1 The learner will conduct investigations and build an understanding of plant growth and adaptations.

Objective 1.02 Observe and describe how environmental conditions determine how well plants survive and grow in a particular environment.

*FLP Lesson – **Your School Ground Through New Eyes** (3-12): Students draw map of school ground indicating location and diversity of plant life.*

*FLP Lesson – **Root Root for Life** (2-6): At hands on stations, students learn the functions of roots, explore the benefits of roots to people, compare tap and fibrous roots, grow plants from roots, and eat and evaluate roots.*

Objective 1.03 Investigate and describe how plants pass through distinct stages in their life cycle including growth, survival, and reproduction.

*FLP Lesson – **Banking on Seeds** (3-7): Students explore the parts of a seed and the uses of seeds through history. By creating a seed bank, students learn the importance of seeds to the modern world.*

Objective 1.05 Observe and discuss how bees pollinate flowers.

*FLP Lesson – **Buzzy, Buzzy Bee** (2-7): Through an apple orchard simulation game, students learn the parts of a flower, parts of an insect pollinator, and the sequence and process of plant pollination. Students also compare the effects of various conditions on pollination.*

Objective 1.06 Observe, describe, and record properties of germinating seeds.

*FLP Lesson – **Seed Surprises** (PreK-3): Hands on sorting activity where students sort seeds by shape, size, and color. Students also identify conditions seeds require for growth and observe seeds sprout. Students identify plant parts and describe their function.*

*FLP Lesson – **We're into Pumpkins** (PreK-6): Students observe, make predictions, measure, and count the seeds from a pumpkin. Students explore uses of pumpkins in the past and present.*

Goal 2 The learner will conduct investigations to build an understanding of soil properties.

Objective 2.01 Observe and describe the properties of soil: color, texture, capacity to hold water.
Objective 2.02 Investigate and observe that different soils absorb water at different rates.
Objective 2.04 Identify the basic components of soil: sand, clay, and humus.

*FLP Lesson – **Perc Through the Pores** (3-6): An introduction to the sand, silt and clay components of soil. A shake jar experiment allows students to obserfve the settling of soil particles. Students participate in a kinesthetic activity in which they role play how soil particles and water droplets interact in various types of soil. Students simulate soil particle sizes and pore space.*

Objective 2.03 Determine the ability of soil to support the growth of many plants, including those important in our food supply.

*FLP Lesson – **Your School Ground Through New Eyes** (3-12): Students map the school ground first from memory and then observation and/or measurement. Observe and describe the diversity of plant life in the school ground area.*

*FLP Lesson – **From Fiber to Fashion** (4-12) – Simplest version helps students see how soil supports growth of plants for food and fiber. Students discuss renewable and nonrenewable resources.*

Objective 2.05 Determine how composting can be used to recycle discarded plant and animal material.
Objective 2.06 Determine the relationship between heat and decaying plant and animal matter in a compost pile.

*FLP Lesson - **From Apple Cores to Healthy Soil** (2-8): A composting experiment allows students to observe how soil organisms, temperature, air, and water decompose organic waste and enrich soil. Students describe the nutrient cycle.*

GRADE 4

Goal 2 The learner will conduct investigations and use appropriate technology to build an understanding of the composition and uses of rocks and minerals.

Objective 2.05 Discuss and communicate the uses of rocks and minerals.

*FLP Lesson – **Nail by Nail, Board by Board** (4-12): An exploration of what shelters are made of (minerals, metals, oil, petroleum, soil, rocks, trees, and other plants), where building materials come from (renewable and non-renewable resources; imported or exported), and associated careers in the building industry.*

Goal 4 The learner will conduct investigations and use appropriate technology to build an understanding of how food provides energy and materials for growth an repair of the body.

Objective 4.03 Discuss how foods provide both energy and nutrients for living organisms.

*FLP Lesson – **Gifts from the Sun** (4-8): Through creating and improvising students learn the components and basic processes of photosynthesis as the means by which green plants capture sunlight and use it to make food for other living things.*

*FLP Lesson – **What's the Shape of Your Diet?** (4-12): Students collect data on the food they eat over a 23 hour period and compare their food consumption to the Food Pyramid Guide to determine if their food choices create a good diet.*

*FLPLesson - **Calorie Counting**: Students compare their actual caloric intake with their caloric expenditure and explore ways that food choices and activity affect their energy balance.*

Objective 4.04 Identify starches and sugars as carbohydrates.

*FLP Lesson – **Mighty Macros** (6-12): Students conduct simple experiments and collect data about their personal food choices to learn how foods supply the body with needed nutrients such as carbohydrates, proteins, and lipids.*

Objective 4.05 Determine that foods are made up of a variety of components.

*FLP Lesson – **Be Label Able** (4-12): Students graph the weight of several nutritional components identified on cereal box labels to select the healthiest cereal. They use this info to design and market a new healthy cereal.*

GRADE 5

Goal 1 The learner will conduct investigations to build an understanding of the interdependence of plants and animals.

Objective 1.01Describe and compare several common ecosystems (communities of organisms and their interaction with the environment.
Objective 1.03 Explain why an ecosystem can support a variety of organisms.
Objective 1.04 Discuss and determine the role of light, temperature, and soil composition in an ecosystem's capacity to support life.
Objective 1.05 Determine the interactions of organisms within an ecosystem.

*FLP Lesson – **Your School Yard Through New Eyes** (3-12): Students map their school ground first from memory and then from observation and/or measurement.. Attention is*

given to the diversity of plant and animal life that is present in various areas of the school ground.

Objective 1.06 Explain and evaluate some ways that humans affect ecosystems (habitat reduction due to development, pollutants, increased nutrients).

*FLP Lesson – **Trash Bashing** (1-12): In a small group sorting activity students learn to conserve energy and other resources by reducing, reusing, and recycling solid waste. Students develop plants to change personal behaviors.*

*FLP Lesson – **What Will the Land Support**? (5-12): Students play a board game to simulate changes in land use which affect the land's carrying capacity. Observing the effect of population growth and resource use on the environment, students are challenged to generate game guidelines that will conserve or renew resources and minimize human impact on the environment.*

*FLP Lesson – **Investigating Insects** (3-12): A research and discussion activity on beneficial insects, organic gardening, biological control of insect pests, and integrated pest management. Students explore the advantages and disadvantages of pesticides.*

*FLP Lesson – **Less Elbow Room**: A simulation of how progressive crowding can occur. Students discuss how short and long doubling population times affect conditions such as food, housing, space, and resources.*

Objective 1.07 Determine how materials are recycled in nature.

*FLP Lesson – **From Apple Core to Healthy Soil** (2-8): A composting experiment allowing students to observe how soil organisms, temperature, air, and water decompose organic waste and enrich soil. Students describe the nutrient cycle and most favorable conditions for increasing rate of decomposition.*

Goal 2 The learner will make observations and conduct investigations to build and understanding of landforms.

Objective 2.01 Identify and analyze forces that cause change in landforms over time including water and ice, wind, gravity.

*FLP Lesson – **Soil is Not Trivial** (5-12): Using facts from the dust bowl students write questions and play a trivia game*

Objective 2.05 Discuss how the flow of water and the slope of the land affect erosion.
Objective 2.07 Discuss and analyze how humans influence erosion and deposition in local communities, including school grounds, as a result of clearing land, planting vegetation, building dams.

*FLP Lesson – **Your Schoolyard Through New Eyes** (3-12): Students map the school grounds from memory and then from observation, Areas of erosion can be noted on map*

*FLP Lesson – **Till We or Won't We**? (4-9): Experiments to simulate rain on a field to determine how soil preparation and tillage techniques and mulches affect soil erosion and water runoff. Introduction to modern best practices used by farmers and home owners to reduce erosion and to protect soil productivity and water quality.*
*FLP Lesson – **In Harmony** (4-6): Students develop mapmaking, map reading, and graph reading skills as they learn the capabilities and limitations of land resources by using a soil survey. Students begin to develop knowledge needed to understand complex issues involved in making land use decisions in harmony with land's capability.*

Goal 3 The learner will conduct investigations and use appropriate technology to build an understanding of weather and climate.

Objective 3.01 Investigate the water cycle including the processes of evaporation, condensation, precipitation, and runoff.

*FLP Lesson – **Don't Use It All Up** (Prek-12): A sponge demonstration illustrating that people are consumers of a finite amount of water. Students observe the impact of a growing population and increased need for water on that finite supply and discuss ways to conserve this valuable resource.*

Goal 4 The learner will conduct investigations and use appropriate technology to build an understanding of forces and motion in technological design.

Objective 4.06 Build and use a model to solve a mechanical problem. Devise a test for the model. Evaluate the results of the test.

*FLP Lesson – **Go, Go H O** (*6-8): *Students design an irrigation system*